CLAIMS

1. Use of an immobilised transition metalcarbonyl complex as a catalyst in a Pauson-Khand reaction.

2. Use of an immobilised π-alkynetransition metalcarbonyl complex as a catalyst for the Pauson-Khand reaction.

3. Use of a catalyst as claimed in claim 1 or 2 wherein the transition metal is selected from cobalt, rhodium, iridium, tungsten, molybdenum, titanium, nickel, iron and ruthenium.

4. Use as claimed in claim 3 wherein the transition metal is cobalt.

5. A process for the preparation of a cyclopentenone compound or analogue thereof which comprises either;

reacting an alkyne, an alkene, and carbon monoxide in the presence of an immobilised transition metalcarbonyl catalyst; or

reacting an alkyne, an alkene, and carbon monoxide in the presence of an immobilised alkynetransition metalcarbonyl catalyst.

6. A process as claimed in claim 5 wherein the transition metal is selected from cobalt, rhodium, iridium, tungsten, molybdenum, titanium, nickel, iron and ruthenium.

7. A process for the preparation of a resolved or partly resolved cyclopentenone compound or analogue thereof which comprises either;

reacting an alkyne, an alkene, and carbon monoxide in the presence of a resolved or partially resolved immobilised heterobitransition metalcarbonyl catalyst; or

reacting an alkyne, an alkene, and carbon monoxide in the presence of a resolved or partially resolved immobilised heterobitransition metalcarbonyl catalyst.

8. A process as claimed in claim 7 wherein each transition metal is selected from cobalt, rhodium, iridium, tungsten, molybdenum, titanium, nickel, iron and ruthenium.